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JUN 19 2002

TECH CENTER 1600/2900

<110> McGill University
Rouleau, Guy A.
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<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS
THEREOF AND METHOD USING SAME TO ASSESS, DIAGNOSE,
PROGNOSE OR TREAT EPILEPSY

<130> GOUD:023

<150> 09/167,623

<151> 2000-11-24

<140> PCT/CA00/01404

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<140> 60/167,623

<141> 1999-11-26

<160> 408

<170> PatentIn Ver. 2.1

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 Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser	115	120	125
Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe	130	135	140
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gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag 180
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ttgctgattt gtattaggta ccatagagtg aggcgaggat gaagccgaga agatactgca 360
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tgccccagtg agactgcagc ccttgtaaatt actttgacac cttttgcaag aaggaatctg 480
aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac 540
tgcatagga taattttcct tttaatcagg taagccatct aattgtttca tcttgatttt 600
aagtttattc attccagtta ttccttttga aaaagagtcc atggaaattc agtttgggca 660
gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct 720
cctcttcttg tccccctccc cgcgcctccc tctctcaacc ttccatgaac tgaaatcagg 780
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catctggcca 850

<210> 6
<211> 483
<212> DNA
<213> Homo sapiens

<400> 6
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caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca 180
ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg 240
cccaaagcaa atagtgactt ggaagctgga aagaaccttc catttattta tggagacatt 300
cctccagaga tgggtgtcaga gccctggag gacctggacc cctactatat caataagaaa 360
gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggac 420
tggtgtagca ccaacacatg ccaatagcac aaatctagta tctctgttag aatgaacaca 480
ttt 483

<210> 7
<211> 497
<212> DNA
<213> Homo sapiens

<400> 7
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agttaaagtg gtttatactt tcatacttct atgttgtgtt cctgtcttac agacttttat 180
agtattgaat aaagggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt 240
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ttcaagtgat taatattaac tatttgtaca tgatctgtaa gcactttata gctaaatatc 360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcattcttg 420
tcatattagc ctcatcttta aagttcatta atcacataga cattactgaa acatgtactc 480
tttaacattt tatatat 497

<210> 8
<211> 501
<212> DNA
<213> Homo sapiens

<400> 8
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tatccctgaa ttttggtctaa gctgcagttt gggcttttca atgttagctt tttgtaatat 180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca 240
tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg 300
attggacaaa gaatgtagag taagttcaac ttatatTTTT aataacatat atacattygg 360
gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag 420
tcattcctag acaaaattac gcagcaagag gacaatgctc attggccctc aggcctgctg 480
gcgtttatact gattatcact c 501

<210> 9
<211> 563
<212> DNA
<213> Homo sapiens

<400> 9
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aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataa 180
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cagatacacc ttcacaggaa tatatacttt tgaatcactt ataaaaatta ttgcaagggg 300
attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttcactgt 360
cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggttttcc 420
atcagtgtct atgcttttaa gaataggttt gctttacctg tagaatattt ttgtgtgatt 480
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tagcatgaag gctttgcagt agt 563

<210> 10
<211> 253
<212> DNA
<213> Homo sapiens

<400> 10
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agtcttgaga gctttgaaaa ctatttcggt aattccaggt aagaagtgat tagagtaaag 180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa 240
ctcccgtta cag 253

<210> 11
<211> 340
<212> DNA
<213> Homo sapiens

<400> 11
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tgtttttgtg tttgtgtgtg aactcccgtc tacaggtacg tcacagagtt tgtggacctg 120
 ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc 180
 attccaggtg agagcaaggt tagataatga gacggacca tcatgtgatt cagcatcctt 240
 ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggt gttcaaagaa 300
 atgattatta tgtagacat agcttatcag cctggagtta 340

<210> 12
 <211> 409
 <212> DNA
 <213> Homo sapiens

<400> 12
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 gagccctgat ccagtctgtg aagaagctct cagatgtaat gatcctgact gtgttctgtc 120
 tgagcgtatt tgctctaatt gggctgcagc tggtcatggg caacctgagg aataaatgta 180
 tacaatggcc tcccaccaat gcttccttgg aggaacatag tatagaaaag aatataactg 240
 tgaattataa tggtagactt ataaatgaaa ctgtctttga gtttgactgg aagtcataata 300
 ttcaagattc aagtaagaat tattgttatg tacatttcct taaaaagtag aattggattg 360
 tttgtaacac aaaggataaa tacttgaggg gctggatatt ccattttac 409

<210> 13
 <211> 266
 <212> DNA
 <213> Homo sapiens

<400> 13
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 cgactttctt ttttcaaaca ggatatcatt atttcttgga ggggttttta gatgcactac 180
 tatgtggaaa tagctctgat gcagggttaag tcaatattgt gtgcatctgt gtatattgta 240
 tgtacacaat acatatgtgt atcttt 266

<210> 14
 <211> 604
 <212> DNA
 <213> Homo sapiens

<400> 14
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 gaaatagatt agttacttat ttgtcaaact tttattttga aataccaaat ctttctgact 180
 aggcaatatt atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
 ttttacccca cttgcagcca atgtccagag ggatatatgt gtgtgacagc tggtagaaat 300
 cccaattatg gctacacaag ctttgatacc ttcagttggg cttttttgtc cttgtttcga 360
 ctaatgactc aggacttctg ggaaaatctt tatcaactgg tgagaactaa agagccacac 420
 tctccattta agtaaaaagta tacaagaaaa ccaattgagt tatgaaatta aaaccggatg 480
 ataatatagt agaaagagca gaacttgaca cgagacttga gttcctctat cctattgatt 540
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 tcaa 604

<210> 15
 <211> 378
 <212> DNA

<213> Homo sapiens

<400> 15

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acatgatatt ttttgtattg gtcattttct tgggctcatt ctacctaata aatttgatcc 180
tggctgtggt ggccatggcc tacgaggaac agaatcaggc caccttgga gaagcagaac 240
agaaagaggc cgaatttcag cagatgattg aacagcttaa aaagcaacag gaggcagctc 300
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tagtctagag cgtgtgat                                     378
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<210> 16

<211> 845

<212> DNA

<213> Homo sapiens

<400> 16

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cataataaat gttacatgg agcaaaactaa attatctcca aaagccttca ttaggtagaa 180
agaaaaaaaa aatctcctct tatacttgca gagaatcttc tctgtgagat gatcttcagt 240
cagttcaata tattttttta aagccatgca aatacttcag ccctttcaaa gaaagataca 300
gtctcttcag gtgctatggt aaaatcattt ctcttcaata tagcaggcag caacggcaac 360
tgcttcagaa cattccagag agcccagtg agcaggcagg ctctcagaca gctcatctga 420
agcctctaag ttgagttcca agagtgttaa ggaaagaaga aatcggagga agaaaagaaa 480
acagaaagag cagtctggtg gggaagagaa agatgaggat gaattccaaa aatctgaatc 540
tgaggacagc atcaggaggw aagggttttcg ctctctcatt gaagggaacc ggttgacata 600
tgaaaagagg tactcctccc cacaccagg atggcactgc tgagtttact gatgcatggt 660
tgaaaattaa aacatgggag agagggggag atttagaaaa tggactcagg aatttttatc 720
aactgaatca accactgttg tggttatatt aaacccatcc ctctctcaca tagttatgca 780
aaaactttac tccacagata tgtaagtcta cagctcgggt tagttaagat aacaccaagt 840
tgaca                                             845
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<210> 17

<211> 965

<212> DNA

<213> Homo sapiens

<400> 17

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taatcccaag ggctagaaac tttcttttat caaggtaatt taatttaatg tgaatgcaca 180
taaaatgaga atgataatca aaaggaatga accatattct gttatgaatg ctgaaatctc 240
cttctacata atcttgcaaa atgaaatcac attcaaagt ccatattaat atgactctat 300
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gagaacgact tcgcagatga tgagcacagc acctttgagg ataacgagag ccgtagagat 480
tccttgtttg tgccccgagc acacggagag agacgcaaca gcaacctgag tcagaccagt 540
aggtcatccc ggatgctggc agtggtttcca gcgaatggga agatgcacag cactgtggat 600
tgcaatggtg tgggttcctt ggttggtgga ctttcagttc ctacatcgcc tgttgacag 660
cttctgccag aggtgataat agataagcca gctactgatg acaatgtaag gaagtytta 720
atagttcagg catggctggc tcactattgc tgcaccagcc agtgtgtcta cagaacggca 780
accttgagaa tgattcctgg ttggctcagc tgtgaatgca cctgcattct gtaatatctt 840
tgatagacta accaactaaa acttaaaacc ttagcagtcg cctgcacaaa cctgaatgca 900
tttacttatt aaaagtgcata aggattgatt agacacaata attactgcct ccagttggag 960
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gattt

<210> 18
 <211> 641
 <212> DNA
 <213> Homo sapiens

<400> 18
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 atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca 180
 tgtgtttcat gaaattcact gtgtcaccat ttggttggtt gcttgtcata ttgctcaa 240
 taattgttta atgcattagc attttttttt acagggaaca accactgaaa ctgaaatgag 300
 aaagagaagg tcaagttctt tccacgtttc catggacttt ctagaagatc cttcccaaag 360
 gcaacgagca atgagtatag ccagcattct aacaaatata gtagaagggt ggtaacaaat 420
 tctattttctg tttcaattat tttcaccaaa cttatattgt ctcatattca acaaatatat 480
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 cttatatcta ctcagatatt ctagaagcct taacaattta ttttaaaatg agtgatattg 600
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<210> 19
 <211> 818
 <212> DNA
 <213> Homo sapiens

<400> 19
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 ataaccttgg gaggtttaga gtaaactgta atttttttta caagtacaaa aaaggggtgc 180
 tctgtaacaa aaatgtgttg attactgaaa ataagtttag tggatatgaa ataaatgtgt 240
 gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaacttgaa 300
 gaatccaggc agaaatgccc accctgttgg tataaatttt ccaacatatt cttaatctgg 360
 gactgttctc catattggtt aaaagtgaat catgttgtca acctgggtgt gatggacca 420
 tttgttgacc tggccatcac catctgtatt gtcttaataa ctcttttcat ggccatggag 480
 cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
 ttggaaggta aatgtgttta gtcttcaaat tttctgcttg aaaaactgtt tacatttaat 600
 tgtgtatagc agtctttcaa ccatccttca tgcttctctg cccctgcaaa atcgcaatta 660
 tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcacia 720
 aaactgagaa aggcattaggc ctacagcact acttgaaaag tcaacagcaa tatttataat 780
 ttttcaggat ccagaagtag ctcatagatt aagaacat 818

<210> 20
 <211> 645
 <212> DNA
 <213> Homo sapiens

<400> 20
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 ttatctactt cgcgtttcca caaggataaa attaaataat gtatatgawa gtctttcatc 120
 aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata 180
 agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggt ggaattagat 240
 taattttgtt ttgatcttag gttttcactg ggtcttttac agcagaaatg tttctgaaaa 300
 ttattgccat ggatccttac tattatttcc aagaaggctg gaatatcttt gacggtttta 360
 ttgtgacgct tagcctggta gaacttggac tcgccaatgt ggaagggtta tctgttctcc 420

gttcatttcg attggtaaaa aaaaaaaaaa aaggaaccaa attcaaaaac ctttctaaca 480
 ttcagggttc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcatgtga 540
 agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt 600
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<210> 21
 <211> 829
 <212> DNA
 <213> Homo sapiens

<400> 21
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 aaatatatat taatctttca ttttcagct gcgagatttc aagttggcaa aatcttgcc 120
 aacgttaaat atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac 180
 cctcgtcttg gccatcatcg tcttcatttt tgccgtggc ggcatgcagc tctttggtta 240
 aagctacaaa gattgtgtct gcaagatcgc cagtgttgc caactccac gctggcacat 300
 gaatgacttc ttccactcck hcctgattgt gttccgcgtg ctgtgtggg agtggataga 360
 gaccatgtgg gactgtatgg aggttgctgg tcaagccatg tgccctactg tcttcattgat 420
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 caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta 540
 aaacttaaaag tataataaaa aaaaagagta taatttaatg gtgactgttt tgtcaaaaag 600
 aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcacttta 660
 caacacagca atatabcagt gcccctgcat tttttatacc aaattctatt ttgtcagtca 720
 ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg 780
 atgtgctggg accattttat aaattcagag ccaaggaaga gagaagtct 829

<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 22
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 agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca 180
 tcttctaatac actatgctgt ggtgtttcct tctcatcaag ttttagaact tagagttttt 240
 tccacactta aaagaaagaa taagtgttg taatctgctc ttccctacat tgggtgtaaaa 300
 ttataatcat gtttttggtg tttttaaggc cctgaatctc tttctggcct tgcttctgag 360
 ctcatcttagt gcagacaacc ttgcagccac tgatgatgat aatgaaatga ataactctca 420
 aattgctgtg gataggatgc acaaaggagt agcttatgtg aaaagaaaaa tatatgatt 480
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 aaaatacatt attgatgaaa gtgattacat gtcattcata aacaacccca gtcttactgt 720
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 tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tataggtgtg ggtaggtatg 840
 aatacatata catatatata tatacacaca tacagatgay cctcagctta atgatgtttt 900
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<210> 23
 <211> 516
 <212> DNA
 <213> Homo sapiens

<220>

<221> modified_base

<222> (403 - 516)

<223> N = A, C, G, or T

<400> 23

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aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact 180
ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca 240
ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg 300
aaccggaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaa cttaaagtct 480
agtgtcatgc tttgattata tctgcccaat atntgg 516
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<210> 24

<211> 640

<212> DNA

<213> Homo sapiens

<400> 24

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gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
acactttctg caggctgtgt acaaagattc aagtgttgtc aaatcaatgt ggaagaaggc 240
agaggaaaac aatggtggaa cctgagaagg acgtgtttcc gaatagttag acataactgg 300
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aagaaaaggc gatacagcac taatttttag aacactctaa tactgatgac ttattaatcc 420
tttgtttcat tgtcttagta tccaatgcat ttttaattat cccacctgtg atcttctata 480
gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt 540
taagaagcta atcataatt tttgcttact attaaatagc ccagaaagtg tagcccttca 600
gcttattcat taacaccaa ggatgtgaat attcaattac 640
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<210> 25

<211> 607

<212> DNA

<213> Homo sapiens

<400> 25

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ttgcgaggaa aaaaaaaaaa taacagtaac tactgtttct ctgccctcct attccaatga 180
aatgtcatat gcatatgatt aattttttta atagcttatg gagtataatt atttttgaaa 240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa 300
agacgattaa gacgatgttg gaatatgctg acaaggtttt cacttacatt ttcattctgg 360
aatgcttctt aaaatgggtg gcatatggct atcaaacata tttcaccaat gcctggagtt 420
ggctggactt cttaattgtt gatgtaggta tcgttcatat ttttgtctct gttcaaggta 480
gcttgtctta tttatattca aattctacaa tagtgagtct cagaccacta tgttatgttg 540
acagactata atarccacta aacgcatata tgcaatgaga gtgtcatttc tggaagacaa 600
gggctaa 607
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<210> 26

<211> 336

<212> DNA
<213> Homo sapiens

<400> 26
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<212> DNA

<213> Homo sapiens

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 Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
 805 810 815
 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
 820 825 830
 Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
 835 840 845
 Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp

850	855	860
Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala		
865	870	875 880
Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala		
	885	890 895
Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys		
	900	905 910
Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe		
	915	920 925
Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile		
	930	935 940
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu		
	945	950 955 960
Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn		
	965	970 975
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala		
	980	985 990
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly		
	995	1000 1005
Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe		
	1010	1015 1020
Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys		
	1025	1030 1035 1040
Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His		
	1045	1050 1055
Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn		
	1060	1065 1070
Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp		
	1075	1080 1085
Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr		
	1090	1095 1100
Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu		
	1105	1110 1115 1120
Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn		
	1125	1130 1135
Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala		
	1140	1145 1150
Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu		

1155	1160	1165
Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile		
1170	1175	1180
Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr		
1185	1190	1195 1200
Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe		
1205	1210	1215
Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile		
1220	1225	1230
Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val		
1235	1240	1245
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr		
1250	1255	1260
Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu		
1265	1270	1275 1280
Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr		
1285	1290	1295
Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg		
1300	1305	1310
Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn		
1315	1320	1325
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys		
1330	1335	1340
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala		
1345	1350	1355 1360
Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp		
1365	1370	1375
Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser		
1380	1385	1390
Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val		
1395	1400	1405
Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp		
1410	1415	1420
Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln		
1425	1430	1435 1440
Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe		
1445	1450	1455
Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile		

1460	1465	1470
Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile		
1475	1480	1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu		
1490	1495	1500
Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe		
1505	1510	1515
Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser		
1525	1530	1535
Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr		
1540	1545	1550
Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu		
1555	1560	1565
Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser		
1570	1575	1580
Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val		
1585	1590	1595
Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu		
1605	1610	1615
Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg		
1620	1625	1630
Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr		
1635	1640	1645
Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly		
1650	1655	1660
Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser		
1665	1670	1675
Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn		
1685	1690	1695
Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr		
1700	1705	1710
Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro		
1715	1720	1725
Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly		
1730	1735	1740
Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile		
1745	1750	1755
Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu		

1765	1770	1775
Glu Asn Phe Ser Val Ala Thr	Glu Glu Ser Ala Glu Pro Leu Ser Glu	
1780	1785	1790
Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp		
1795	1800	1805
Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala		
1810	1815	1820
Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile		
1825	1830	1835
Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp		
1845	1850	1855
Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met		
1860	1865	1870
Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro		
1875	1880	1885
Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln		
1890	1895	1900
Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu		
1905	1910	1915
Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys		
1925	1930	1935
Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp		
1940	1945	1950
Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser		
1955	1960	1965
Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys Glu		
1970	1975	1980
Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys Asp Ile		
1985	1990	1995
Arg Glu Ser Lys Lys		
2005		

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 <212> PRT
 <213> Homo sapiens

<400> 36
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20 25 30
Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
35 40 45
Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
50 55 60
Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65 70 75 80
Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95
Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110
Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125
Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140
Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160
Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175
Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190
Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205
Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220
Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240
Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255
Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270
Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
275 280 285
Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300
Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
 325 330 335
 Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
 340 345 350
 Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
 355 360 365
 Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
 370 375 380
 Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
 385 390 395 400
 Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
 405 410 415
 Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
 420 425 430
 Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
 435 440 445
 Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
 450 455 460
 Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
 465 470 475 480
 Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
 485 490 495
 Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
 500 505 510
 Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
 515 520 525
 Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
 530 535 540
 Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
 545 550 555 560
 Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
 565 570 575
 Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
 580 585 590
 Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
 595 600 605
 Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
 610 615 620

Val Ser Gln Ala	Ser Arg Ala	Ser Arg Val	Leu Pro Ile	Leu Pro Met
625	630		635	640
Asn Gly Lys Met	His Ser Ala	Val Asp Cys	Asn Gly Val	Val Ser Leu
	645	650		655
Val Gly Gly Pro	Ser Thr Leu	Thr Ser Ala	Gly Gln Leu	Leu Pro Glu
	660	665		670
Gly Thr Thr Thr	Glu Thr Glu	Ile Arg Lys	Arg Arg Ser	Ser Ser Tyr
	675	680		685
His Val Ser Met	Asp Leu Leu	Glu Asp Pro	Thr Ser Arg	Gln Arg Ala
	690	695	700	
Met Ser Ile Ala	Ser Ile Leu	Thr Asn Thr	Met Glu Glu	Leu Glu Glu
	710		715	720
Ser Arg Gln Lys	Cys Pro Pro	Cys Trp Tyr	Lys Phe Ala	Asn Met Cys
	725	730		735
Leu Ile Trp Asp	Cys Cys Lys	Pro Trp Leu	Lys Val Lys	His Leu Val
	740	745		750
Asn Leu Val Val	Met Asp Pro	Phe Val Asp	Leu Ala Ile	Thr Ile Cys
	755	760		765
Ile Val Leu Asn	Thr Leu Phe	Met Ala Met	Glu His Tyr	Pro Met Thr
	770	775		780
Glu Gln Phe Ser	Ser Val Leu	Ser Val Gly	Asn Leu Val	Phe Thr Gly
	785	790	795	800
Ile Phe Thr Ala	Glu Met Phe	Leu Lys Ile	Ile Ala Met	Asp Pro Tyr
	805	810		815
Tyr Tyr Phe Gln	Glu Gly Trp	Asn Ile Phe	Asp Gly Phe	Ile Val Ser
	820	825		830
Leu Ser Leu Met	Glu Leu Gly	Leu Ala Asn	Val Glu Gly	Leu Ser Val
	835	840		845
Leu Arg Ser Phe	Arg Leu Leu	Arg Val Phe	Lys Leu Ala	Lys Ser Trp
	850	855		860
Pro Thr Leu Asn	Met Leu Ile	Lys Ile Ile	Gly Asn Ser	Val Gly Ala
	865	870	875	880
Leu Gly Asn Leu	Thr Leu Val	Leu Ala Ile	Ile Val Phe	Ile Phe Ala
	885		890	895
Val Val Gly Met	Gln Leu Phe	Gly Lys Ser	Tyr Lys Glu	Cys Val Cys
	900	905		910
Lys Ile Ser Asn	Asp Cys Glu	Leu Pro Arg	Trp His Met	His Asp Phe
	915	920		925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
930 935 940
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960
Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005
Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe
1010 1015 1020
Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys
1025 1030 1035 1040
Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His
1045 1050 1055
Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn
1060 1065 1070
Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp
1075 1080 1085
Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1090 1095 1100
Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu
1105 1110 1115 1120
Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn
1125 1130 1135
Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala
1140 1145 1150
Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu
1155 1160 1165
Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile
1170 1175 1180
Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr
1185 1190 1195 1200
Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe
1205 1210 1215
Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile
1220 1225 1230

Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val
 1235 1240 1245
 Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr
 1250 1255 1260
 Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu
 1265 1270 1275 1280
 Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr
 1285 1290 1295
 Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg
 1300 1305 1310
 Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn
 1315 1320 1325
 Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys
 1330 1335 1340
 Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala
 1345 1350 1355 1360
 Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp
 1365 1370 1375
 Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser
 1380 1385 1390
 Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val
 1395 1400 1405
 Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp
 1410 1415 1420
 Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln
 1425 1430 1435 1440
 Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe
 1445 1450 1455
 Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile
 1460 1465 1470
 Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
 1475 1480 1485
 Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu
 1490 1495 1500
 Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe
 1505 1510 1515 1520
 Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser
 1525 1530 1535

Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr
 1540 1545 1550

Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu
 1555 1560 1565

Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser
 1570 1575 1580

Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val
 1585 1590 1595 1600

Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu
 1605 1610 1615

Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
 1620 1625 1630

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr
 1635 1640 1645

Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly
 1650 1655 1660

Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser
 1665 1670 1675 1680

Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn
 1685 1690 1695

Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr
 1700 1705 1710

Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
 1715 1720 1725

Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly
 1730 1735 1740

Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile
 1745 1750 1755 1760

Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu
 1765 1770 1775

Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu
 1780 1785 1790

Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
 1795 1800 1805

Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala
 1810 1815 1820

Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile
 1825 1830 1835 1840

Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp
1845 1850 1855

Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
1860 1865 1870

Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro
1875 1880 1885

Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln
1890 1895 1900

Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu
1905 1910 1915 1920

Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys
1925 1930 1935

Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp
1940 1945 1950

Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys Glu
1970 1975 1980

Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys Asp Ile
1985 1990 1995 2000

Arg Glu Ser Lys Lys
2005

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<211> 912
<212> DNA
<213> Homo sapiens

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cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatggt tcgttccaag 120
aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
tgtgtgtacg ctgtgaagggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
ccttttacag gaagttagggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc 480
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ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
ctatgtctgt cgctaggcat gaggtctctt aggaatgggt gaaaaaaatg agggatgttt 720
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gcattccata ta 912

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<212> DNA
<213> Homo sapiens

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ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
ccttgctgct attgaacaac gcattgcaga agagaaaagct aagagacca aacaggaacg 240
caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaatc 300
tcttccattt atttatggag acattcctcc agagatgggtg tcagtgcctc tggaggatct 360
ggacccctac tatatcaata agaaagttag ttcttagtca agttgcctc actgcctatt 420
tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctcttccct 480
ctgtctaaag tatcactaag atgctggatg ggctgaccg tgtaattggac caatgatcct 540
agaagtcttt tggaagcact catttgaacc tgcatgtgtg agacaggcag agaactgggtg 600
aggcatcctc cagcgcgga ataaaggaa gacaaaagcc tattcacctt cttgaatata 660
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aa 722

<210> 39
<211> 561
<212> DNA
<213> Homo sapiens

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tggtatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa 180
tattcttaat atatatctta agttttgttt tatgtgttgt gttttctttt tcagacgttt 240
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ttaactccct tcaaccctat tagaaaatta gctattaaga ttttggtaca ttcatatcct 360
ttttcaaatc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt 420
tccaaaatat ctgtgggttg caatgttatg tggtctttct ttttctttcc ttttactcaa 480
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gtgtttcttc tctacccaac t 561

<210> 40
<211> 510
<212> DNA
<213> Homo sapiens

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atagtaagca cttaaagtttt aaacttcatg gtgggtgaagg catggtagtg cataaaagta 180
agatttttcc attgaacttt gtcttcttg acgatattct actttattca atatgctcat 240
tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac 300
aaagaatgtg gagtaagtat aaatatTTTT caatattgac ctccctttat gtttcatatt 360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta 420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagctttag 480
tgggctcact tagttgtgta aattactgca 510

<210> 41
<211> 370
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (293)
<223> N = A, C, G, or T

<400> 41
taagatatgt acttgtaaat taaccactag atttttaatg tgagcttggc tattgtctct 60
caggatatacc tttaacaggaa ttataacttt tgaatcactt attaaaatac ttgcaagggg 120
cttttggtta gaagattttca cttttttacg ggatccatgg aattggttgg atttcacagt 180
cattactttt gcgtaagtat ctttaatacat tttctatcct ggaagagtaa atcactggtg 240
ggagcctata ctatattttc cttggtggct tgccttgaca gaccaagcat ttntcttagt 300
aatcatagtt ttcttccaat caaattatcc agtttgagaa aattaggaac tatcatagta 360
aattacatgg 370

<210> 42
<211> 370
<212> DNA
<213> Homo sapiens
<220>
<221> modified_base
<222> (133)
<223> N = A, C, G, or T

<400> 42
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat 60
gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg 120
atgaaagacc aangaagacg tagattttcc taaattctga ataactctga tttaattcta 180
caggatgtga acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt 240
cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataaggtgg 300
taggcccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaacc 360
cctattacag 370

<210> 43
<211> 410
<212> DNA
<213> Homo sapiens

<400> 43
gtaagaagaa aatggtataa ggtggtaggc cccttatatc tccaactgtt tcttgtgttc 60
tgtcattgtg tttgtgtgtg aaccccttat tacagatatg tgacagagtt tgtggacctg 120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc 180
attccagggtg agagctagggt taaacaccga ggctgacttt agctacagtg gtgctacaat 240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa 300
gcaagaattg gtacatcatt ttttggtatg atttgattct ttgcttttta cccggttgctt 360
tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga 410

<210> 44
<211> 1066
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (229)
<223> N = A, C, G, or T

<400> 44
aaagagtgtt tggaaataca catttggttc atttccattc acagttttct aatgaacata 60
caagttctgc ttccattcat ttccaccagc tagtaggctt ttcattgaaa tggtattcaa 120
tcacaaacat taaactaata ttgttggcat tctgcatgac atttttattt tccaggccaa 180
gctcatgata tttttgccgg taaaatagct gttgagtagt atattttaant tcccccttct 240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct 300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca 360
gttggttcattg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt 420
tgaaataaat atcaattcct tctttaacaa ttcattggat gggaatggta ctactttcaa 480
taggacagtg agcatattta actgggatga atataattgag gataaaagta agatatactc 540
tataaaccat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat 600
ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa 660
agagatatca aaggatacct tattctattt ttsttatctg tccattgata tagtaaaagt 720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata 780
ttaaaaaagg tttatttggg agacattaat cagggttttc agtcatttta ataaataagt 840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa 900
taatttgcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa 960
ctagagaaac catttatcaa gatgaaataa gaatttgtgt gctcctcaga aggttaagta 1020
accctgattt agccattcac ttcattccata ttctaattag tccctt 1066

<210> 45
<211> 385
<212> DNA
<213> Homo sapiens

<400> 45
gttcaattat tgtgaaaaat cttcttttagc catatatatt tattagttta tccatctcat 60
tatgattgaa aacatttgtg agctttgcc cctaaacagg gtggctgaag tgttttacag 120
gattttaatg attctttcta ttctttctc tttaaatagg tcaattttat tttttacagg 180
ggcaaaatga tgetctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttctc 240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccactcatcc 300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacgggtg actctcagaa 360
tgaccaggat aagtgtagat tctca 385

<210> 46
<211> 430
<212> DNA
<213> Homo sapiens

<400> 46
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt 60
cattatataa atcagtcac ttagtgctga gtttaagtact gggttaagggtg agagaaatcg 120
gcttttttct agtgccgtga taaaacagac attggcatat attaaaacag gaaaaccaat 180
tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc 240
tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga 300
cacctttagt tgggcctttt tgtccttatt tctgtctcatg actcaagact tctgggaaaa 360
cctttatcaa ctggtgagaa cagataaaat ctttttctg agaatacataa aacaccgaac 420
tcaagagaat 430

<210> 47
<211> 646
<212> DNA
<213> Homo sapiens

<400> 47
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaattttatt 60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt 120
ttgtgctggg catttttcttg ggctcattct atctaataaa tttgatcttg gctgtgggtg 180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg 240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagttaa 300
caagcatacg gtcctttgtt tttctgtatc taaattcttt aacctaaatg ttgaggctcag 360
tggaaggta gttgacatta gaaatagggtc atatgtgttt ggtaagtgtc aggagcctgt 420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa 480
tggcatcaaa aaatggataa ttataattgc tttactgaca ttttttctc ccttgtgact 540
ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgag agtagataaa 600
cctacatgtc ctcagttgaa gtattttctt aggggaagag gaattc 646

<210> 48
<211> 711
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> (164)
<223> N = A, C, G, or T

<400> 48
tatgtatcat cttccatatg aatgcgcatt ttactctttg attggtctaa taacagtgtg 60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcattgat 120
tgaagctcaa ttaagcagta acatgataat tattttttta gatnatatgc aacttcccac 180
atactttgcg cccttctagg cggcagctgc agccgcatct gctgaatcaa gagacttcag 240
tgggtgctgg gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc 300
caaaagttaa aaagagctga aaaacagaag aaagaaaaag aaacagaaaag aacagtctgg 360
agaagaagag aaaaatgaca gaggcctaaa atcgggaatct gaagacagca taagaagaaa 420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc 480
acaccaggta aaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata 540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt 600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt 660
ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g 711

<210> 49
<211> 1026
<212> DNA
<213> Homo sapiens

<400> 49
ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa 60
gatggaaaat ggaggaagga gaaaaagcga gagtgaaata gaaaagggtg accttgtaga 120
aagtgccaaa atgccaccag cagtcacag aggggtgctt tcttccacat gtccaatgac 180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc 240
cagctcttaa ctctcttcat ctcatTTTTT tttcttttct tgttattcat agtcttact 300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt 360

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cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac 420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg 480
gcgccacagc aatgtcagcc aggccagccg tgcctccagg gtgctcccca tcctgcccac 540
gaatgggaag atgcatagcg ctgtggactg caatggtgtg gtctccctgg tcggggggccc 600
ttctaccctc acatctgctg ggcagctcct accagagggtg aggccaacyy magattgcag 660
ctgatgtgaa gagagtgtg actggtgcag gcaggagtgy ttttccattt mcacatctaa 720
gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gttaactgtc 780
ttgtgaaact sttctattca gacttitycta caaagtaatt aaaaacctag gttggctgtc 840
agagaatata attagamgtm atctttcatc ayyattacta tggatatgaaa ctgcgcaaaa 900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg 960
aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcatttaaa 1020
aggaga                                     1026

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<210> 50
 <211> 601
 <212> DNA
 <213> Homo sapiens

```

<400> 50
ataggaaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
taaacaaccc ccaataaatt atcattccaa caatatctta gtgagctttt tacatctgag 120
aaagcatggt gtatatattg ttaaataaca cctgttgtag gaatgctttg ggctttgctg 180
ctttcaaaaa tagtggttat ttcattctgaa attctacttc tagggcacia ctactgaaac 240
agaaataaga aagagacggt ccagttctta tcatgtttcc atggatttat tggaaggtat 300
tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggtat 360
gttaaaagtc ctgcgtcaca gttacttggt gctttcctaa tgatgaaaaa cacttcataa 420
atttcaataa aatacttctt gacttgatat tgtatcatta ttacacattt tactaaataa 480
cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt ttttttatat 540
ttagcctgta gaaagctgct gcaaagttaa ggtatatttg aacaccactt tcataactta 600
a                                           601

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<210> 51
 <211> 645
 <212> DNA
 <213> Homo sapiens

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<400> 51
gcttactagc ctttctgtac tgatcctttc tatgacagca aaccattgtt aaaattttcc 60
ctgttcctcc agcagattaa ccataatat cttttaacaa ctttagattt tttaaattcc 120
ttttaattta aaccaaattc gttaataga aagtaagcag ttttcatgag gattctaact 180
ttttttcttc cagaacttga agaattcaga cagaaatgcc caccatgctg gtataaattt 240
gctaatatgt gtttgatttg ggactgttgt aaaccatggt taaaggtgaa acaccttgct 300
aacctgggtg taatggaccc atttggtgac ctggccatca ccatctgcat tgtcttaaat 360
acactcttca tggctatgga gcaactatcc atgacggagc agttcagcag tgtactgtct 420
gttggaacc tggtaagcct cactgagagt ttctcttctt cttgaaagag tttataattg 480
ccttagtgaa ttttacatat tgctctcaaa ttaaataatca actaattggc catgtatatc 540
ttgacatcaa atgttttagc tcccttttaa ataacaaaaa aatgttgcta ccatagtgcg 600
aaagagtcaa agaatttatg tacaatttga tttagaattg aattt                                     645

```

<210> 52
 <211> 485
 <212> DNA
 <213> Homo sapiens

<400> 52
 tggcccaaac caatttttaa atcaggaatt taattttwtat attggttgga gttaaattaa 60
 gttgctcaat aattattcgt gtttcaakas tatttgctca tataatgaac tacacttctc 120
 atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
 ccatattatt actttcaaga aggctggaat atttttgatg gttttattgt gagccttagt 240
 ttaatggaac ttggtttggc aaatgtggaa ggattgtcag ttctccgatc attccggctg 300
 gtaaattaac tgggagtgtt cataaaatgt acttttrtaat taattagtct tcattctcat 360
 ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaaacaga 420
 ttggattgcc ataccaccaa atggtagttt cttcttcac atagctttta taaagtccac 480
 ttaaa 485

<210> 53
 <211> 602
 <212> DNA
 <213> Homo sapiens

<400> 53
 acagatttcc tcctgtgtcc atgtgactaa cccattgtgc acatgtaccc taaaaattag 60
 tatataataa taaaaataaa taaaaataaa aataaaaaaa taaaaataaa ataaaattgc 120
 agattttttt agaaatgcag agattaacac tgttcttgct tttattttcca gctccgagtt 180
 ttcaagttgg caaaatcttg gccaaactcta aatatgctaa ttaagatcat tggcaattct 240
 gtgggggctc taggaaacct caccttggtt ttggccatca tcgtcttcat ttttgctgtg 300
 gtcggcatgc agctcttttg taagagctac aaagaatgtg tctgcaagat ttccaatgat 360
 tgtgaactcc cacgctggca catgcatgac tttttccact ccttccctgat cgtgttccgc 420
 gtgctgtgtg gagagtggat agagaccatg tgggactgta tggaggtcgc tggccaaacc 480
 atgtgcctta ctgtcttcat gatggtcatg gtgattggaa atctagtggg atgtagcaaa 540
 aacattttcc tcatttttcat taaaaataat gtaatcatta aaaagtgttc aactgaagaa 600
 ta 602

<210> 54
 <211> 803
 <212> DNA
 <213> Homo sapiens

<400> 54
 gtttcattta gcaatgattt cagtattttc tgcaatgact aataagcaaa tagtgataat 60
 agtattattt tatattgacc aagcattttt atttcattca ctttttttca gaatagtgtg 120
 tcatgaatta gcagaaatgc atgttagaat aaaataagggt gtcaagaaca atcttagaaa 180
 actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttctgtgtgt 240
 gtttcagggt ctgaacctct tcttgccctt gcttttgagt tccttcagtt ctgacaatct 300
 tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
 gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cctttgttag 420
 gaagcagaaa gcttttagatg aaattaaacc gcttgaagat cttaaataa aaaaagacag 480
 ctgtatttcc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg 540
 aaatggaact actagtggca taggcagcag ttagaataaa tatgtcgtgg atgaaagtga 600
 ttacatgtca ttataaaaca accctagcct cactgtgaca gtaccaattg ctgttgagga 660
 atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaag 720
 caaagaggta aatgtttaa taaggagata ttttggtgta tataatctgt gttaaatctc 780
 aggtgtttta tgcgtgtctc tgt 803

<210> 55
 <211> 615
 <212> DNA
 <213> Homo sapiens

<220>
<221> modified_base
<222> (90 - 386)
<223> N = A, C, G, or T

<400> 55
atctctatac taggctcaaa cagaagttat ttccggtgtt agcaccatat ttttaaaaga 60
aaaaaaaaata ctatgggtgtt gtatctaata ttgtgacccc tgacctttac caaagcggat 120
tggcattatg ttttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg 180
gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgtttttttg 240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat 300
tggagctccc gccgagggag aacagcctga ggttgaacct gaggaatccc ttgaacctga 360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc 420
ctcttttcta cccatttttt cctattttatt taaatgtctg tttatttgtc taccatctag 480
ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat 540
ccaacaactg tacattttatt tgtttttttt ttttgcattt gctgtttgaa aaaaaatgca 600
acgtttttaa ggcaa 615

<210> 56
<211> 400
<212> DNA
<213> Homo sapiens

<400> 56
gatagctttt gtaagcggaa gctatcttaa aaattaatgt tatttacaat gtattatcag 60
gtaataatgt aaatgaatct cccaccaaca caaatatacc taatcaaaga gtaatttttt 120
gtcttcattt ttttccaca tattttagac tgtgtacgga agttcaagtg ttgtcagata 180
agcatagaag aaggcaaagg gaaactctgg tggaatttga ggaaaacatg ctataagata 240
gtggagcaca attggttcga aaccttcatt gtcttcatga ttctgctgag cagtggggct 300
ctggtaggtg atgcatgatc cactccttca cctttcatct gaaatctttt ccctttccct 360
tcaatcaact catattacc ctttttaaat taagggtgtt 400

<210> 57
<211> 560
<212> DNA
<213> Homo sapiens

<400> 57
aaattactga aacccttggt tgactgaaat gccagtcag cagtcattta tgatcagata 60
atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata 120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa 180
aatttaatat aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa 240
accattaaga ccatgttaga atatgctgac aaggttttca cttacatatt cattctggaa 300
atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctggtgctgg 360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata 420
tatgtaatat ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca 480
gcccaaatat aaattatgtt tctcatttca cagtgaagg atgcctcaaa acatttttta 540
ccaattttaa tacatatata 560

<210> 58
<211> 480
<212> DNA
<213> Homo sapiens

<400> 58
aaattcttag gcctttcccc aaacttacta agtcagactc tgctattggt gtttttaaca 60
agacccttg gtgatttga aactcatgaa agttcgagaa ttactgattc attgcataga 120
gcaaggctga actgtgtaga cttttttata tgtaaataag aaaattgtgt tgctttttct 180
gtataggtct cactggtag cttaactgca aatgccttgg gttactcaga acttgggtgcc 240
atcaaattccc tcagaacct aagagctctg aggccactga gagctttgtc ccggtttgaa 300
ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg 360
acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact 420
gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcactgctg 480

<210> 59
<211> 640
<212> DNA
<213> Homo sapiens

<400> 59
taattttaaa attcttagtt ggagctacca gagtctagtt tctacccaat attcaacttt 60
gaaacagatt tttttaatca tttgactggt cttttaataa tgtttaaaaa taagtaaata 120
tttgttggtg gcttttctact ttttttctt tctcatcctg tgccagggtg ttgtaaatgc 180
tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggct 240
aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta 300
caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct 360
cattgagagc aatcaaactg ccagggtgaa aaatgtgaaa gtaaactttg ataacgtagg 420
acttgatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt 480
gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgttagaatg 540
gctattatca aacagataaa tgacaataaa tgctggcaag aatgtgaaga aaaggaacc 600
cttgtacatt gttggcaggg atgtaaatta gtatagcttt 640

<210> 60
<211> 480
<212> DNA
<213> Homo sapiens

<400> 60
atttgaagta ttttcaatgc atatcgcaaa acattgcccc aaaagtgaat acaaatttca 60
agcttattta tatgcctgta ttgaatacat gtcaaataga attttgatca attattcaat 120
ttattttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc 180
acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta 240
gtttagaggga aattgttttag tttgattaaa tgtatatattc tacaatattg taatttagtg 300
atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga 360
taaaatattt aatcatacta tttctttcaa aattatcata ggatgatttt ctctaatac 420
tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat 480

<210> 61
<211> 366
<212> DNA
<213> Homo sapiens

<400> 61
taaaacatgc ttagataatt aaaaactcac tgatgtactt tttgtgaaac aagtactaga 60
tataatgggt acaattcttc atattcttta ggtagaatta caaccgaagt atgaagacaa 120
cctgtacatg tatctttatt ttgtcatctt tattattttt gggtcattct ttaccttgaa 180
tcttttcatt ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtattat 240

aaaacttcat ccttgctctg aaatatgaac taaatatattc atactctttc ctttagcctc 300
 caaaatgcaa tcaccaaaaa aagaatataa aattcagaaa ttattttgag acatttgata 360
 atcgat 366

<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 62
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 Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Tyr Gly Asp Ile	Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu	65	70	75	80
Asp Pro Tyr Tyr	Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly	85	90	95	
Lys Ala Ile Ser	Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr	100	105	110	
Pro Leu Asn Pro	Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser	115	120	125	
Leu Phe Ser Met	Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe	130	135	140	
Met Thr Leu Ser	Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr	145	150	155	160
Phe Thr Gly Ile	Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg	165	170	175	
Gly Phe Cys Leu	Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp	180	185	190	
Leu Asp Phe Ser	Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp	195	200	205	
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Lys Thr Ile Ser	Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu	225	230	235	240
Ile Gln Ser Val	Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe	245	250	255	
Cys Leu Ser Val	Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn	260	265	270	
Leu Arg Asn Lys	Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu	275	280	285	
Thr Asn Thr Thr	Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr	290	295	300	
Phe Val Asn Val	Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly	305	310	315	320
Asp Asp Ser His	Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu	325	330	335	
Cys Gly Asn Gly	Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys	340	345	350	
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Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
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Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
 420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
 435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
 450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
 485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
 530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
 545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
 565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
 580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
 595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
 610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685
 Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700
 Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720
 Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735
 Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750
 Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765
 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780
 Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800
 Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
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 Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 820 825 830
 Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 835 840 845
 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860
 Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895
 Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
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 Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
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 Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
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 Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 945 950 955 960
 Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
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Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
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Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
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Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu Asn Asp
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Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
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Ser Glu Ser Glu Leu Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser
 1075 1080 1085

Ser Ser Glu Gly Ser Thr Val Asp Val Val Leu Pro Arg Glu Gly Glu
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Gln Ala Glu Thr Glu Pro Glu Glu Asp Leu Lys Pro Glu Ala Cys Phe
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Thr Glu Gly Cys Ile Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu
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Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
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Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
 1155 1160 1165

Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg
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Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
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Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
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Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr Ser Glu Leu
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Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg
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Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val
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Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
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 Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
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 Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
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 Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
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 Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
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 Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
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 Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
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 Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
 1395 1400 1405
 Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
 1410 1415 1420
 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
 1425 1430 1435 1440
 Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
 1445 1450 1455
 Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470
 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485
 Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
 1490 1495 1500
 Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
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 Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
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 Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
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 Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
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 Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600

Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
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Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
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Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645

Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
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Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
 1665 1670 1675 1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
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Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
 1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
 1730 1735 1740

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760

Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
 1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
 1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
 1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
 1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
 1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
 1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
 1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
 1905 1910 1915 1920

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 1940 1945 1950

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 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
 85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
 100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
 180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
 260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
 275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
 290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
 305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
 325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
 355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
 385 390 395 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
 405 410 415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
 420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
 435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
 450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
 485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
 530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
 545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
 565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
 580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
 595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
 610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
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Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
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Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
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Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
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Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
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Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
 995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
 1010 1015 1020

Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu Asn Asp
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Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
 1060 1065 1070

Ser Glu Ser Glu Leu Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser
 1075 1080 1085

Ser Ser Glu Gly Ser Thr Val Asp Val Val Leu Pro Arg Glu Gly Glu
 1090 1095 1100

Gln Ala Glu Thr Glu Pro Glu Glu Asp Leu Lys Pro Glu Ala Cys Phe
 1105 1110 1115 1120

Thr Glu Gly Cys Ile Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu
 1125 1130 1135

Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
 1140 1145 1150

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
 1155 1160 1165

Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg
 1170 1175 1180

Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
 1205 1210 1215

Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
 1220 1225 1230

Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr Ser Glu Leu
 1235 1240 1245

Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg
 1250 1255 1260

Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val
 1265 1270 1275 1280

Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
 1285 1290 1295

Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
 1300 1305 1310

Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
 1315 1320 1325

Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
 1330 1335 1340

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
 1345 1350 1355 1360

Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
 1365 1370 1375

Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
 1380 1385 1390

Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
1395 1400 1405

Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
1410 1415 1420

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
1425 1430 1435 1440

Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
1445 1450 1455

Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
1460 1465 1470

Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
1475 1480 1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
1490 1495 1500

Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
1505 1510 1515 1520

Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
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Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
1540 1545 1550

Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
1555 1560 1565

Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
1570 1575 1580

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
1585 1590 1595 1600

Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
1605 1610 1615

Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
1620 1625 1630

Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
1635 1640 1645

Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
1650 1655 1660

Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
1665 1670 1675 1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
1685 1690 1695

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
1700 1705 1710

Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
1730 1735 1740

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
1745 1750 1755 1760

Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
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<212> DNA

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<212> DNA

<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

<400> 71

gatatattaa attttatgta ttttaataaa ttataatgtg catataatca ttaataatat 60
atatattcca caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat 120
ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa 180
aagtaaaaga gaactggaa agaactatga gggatttcca aacagcaaaa ttgtcattga 240
agccatgaga aactctactc actaaattct ttaattttct agcctaccca aatattgggc 300


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aaaccctaatt tctcttgagc gggaaaagct gagagtctgg aactagccta tcttccgagg 360
acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat 420
tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt 480
aaaaagtttt tcatgatatt gtgatggcac cttgttccat atcatctcag ataaatcaga 540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt 600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt 660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga 720
ggctgagaca ggtagatga tacaggcata ccattagcag cagactcaat actaaccag 780

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<210> 72
 <211> 1025
 <212> DNA
 <213> Homo sapiens

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<400> 72
acaaagttat gaaaaggcgg ggggcaggat gcagaataat taagcaattt tattgacaaa 60
ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaaac 120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata 180
taatgtttat atattatata tactgtacat tgtagaatgg ctaaatacaa ctaattaaca 240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat 300
gatgttttca agttcaaatg tgtagtgcag tactaaaagc atgacttaat gtttatagct 360
ttaaaaaagt actaaagaat gacatttttg ttgatgttct tatgcccaat cgcttgcttt 420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg 480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtagccccc aggacctgaa 540
agcttccgcc tttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag 600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat 660
agtgaacttg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg 720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat 780
tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt 840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt 900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggttac 960
agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatag 1020
caaaa 1025

```

<210> 73
 <211> 433
 <212> DNA
 <213> Homo sapiens

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<400> 73
tgtaacyata tgtaatttta aacatctaac atgtttgtag ttatgatata tcaactgggt 60
taaacaaacc agtttgaaca aacaaattcy attttttaaa aaggctcctca tgtatgtaag 120
ctccttaaatt aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgata 240
ttttaactcc actaaaccct gttaggaaaa ttgctabsaa gattttggta cattcatatc 300
cttttaattgt gaattgccta aatgctattt ctaacagttg attttaaga aaatgtcagt 360
tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
catttatttg cat 433

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<210> 74
 <211> 450
 <212> DNA
 <213> Homo sapiens

<400> 74
gagtgcacca aggccatatac acaggccttg aagtttctta ttattttatac attgttttaa 60
aacaaataat attaatattca cagtttttgc atcgataaac ttttttgtgt gttttggatc 120
atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc 240
tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
actcaaattc tctagcaatc tccttgtggg tatagcctga cttatgggtt ccacttctgt 360
ctaagaaaag ttattttcat aatatgcagc cggttaaggga ggtctttcgg gggagctatt 420
cttctacgag gtaagtattt tcccacaaaa 450

<210> 75
<211> 701
<212> DNA
<213> Homo sapiens

<400> 75
aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt 60
caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa 120
accagattag attcctaaag aatatatttt ctcttcagtt taactctttg ctcaggcttg 180
taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tattttaatg 240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttacagtt 300
caagcaaaat tgttaatttt ggcttggatg ttttcctag gtacacattc actggaatct 360
atacctttga gtcacttata aaaatcttgg caagaggggt ttgcttagaa gattttacgt 420
ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt 480
tgaaaatttg ataagcgcaa aggagtgaat atagtcatag tacaacaag gtctttgtgt 540
catatattaa atgtagagct ttcttgtag tcaagttaac tatatgggtt gtgtattttc 600
agaatacata ttagaataca tattgcaatg taaatatatc cagtaaatga tcaataaatg 660
gggttatctt catgtcatat agtctttctc ttcacaaaa t 701

<210> 76
<211> 286
<212> DNA
<213> Homo sapiens

<400> 76
atttgttaaa ctcacagggc tctatgtgcc aaaccagca ttaagtcctt atttagtata 60
aactttgcca aaactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt 120
aagcctagc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat 180
ttctgtaatc ccaggtaga agaaactggt gtaaggtagt agggccctta tatctccaac 240
ttttcttgtg tgttattgtg tttgtgtgtg aactccccta ttacag 286

<210> 77
<211> 515
<212> DNA
<213> Homo sapiens

>400> 77
gtaagaagaa actggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt 60
attgtgtttg tgtgtgaact cccttattac agatatgtga cagagtttgt ggacctgggc 120
aatgtctcag cgttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt 180
ccaggtgaga gctagggttaa acaccgaggt tgacttttaatt tattgagttt gaaatcaatt 240
tatatgactt acagcattag ccttgttgct tattattaca gttcatcccg gtaataaatg 300
ccaaatgatg tttcaatgtc agtttagctc ctaaaatttt ataaattaca tgcgtattta 360
taaagtcagc ctttgagttt aacagaaaat tgcagtggac atcttcaaaa aatgctaatt 420

tgggcctctt gcgctctctc tctctctttt tcaactaccat ggctttacta acagatttgg 480
 attttaccat tcgctgcaga tgtagttcaa aaatg 515

<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

<400> 78
 aaacttcctg actagatatt taaaccttca tattgaattt ccagcaagca cactgttcat 60
 gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttgggtg 120
 tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc 180
 atgatttctg gcaactcttc tcaggtaacc tatagttctc tctctgcagg tttaaagacc 240
 attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg 300
 ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat 360
 aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttcctacttt 420
 aatggcaciaa tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg 480
 aaggataaca ttggagatga cagtaagaag tattacatta tgtaacctt agtgttgctg 540
 aatgaatttt caactataaa tagt 564

<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

<400> 79
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 tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac 120
 aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atgggttcaga 180
 tgcagggtaa gaaacataat atatatTTTT aagatataga actctttgctg aaaaaaaaaa 240
 gtaggttaga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag 300
 cagtgtctgt cccctaggaa gtgccttgtc tgccttaccg gattgccact ggtcctaacc 360
 tcacagcaat taaaaattat ccccttgtga agacctttcc ccaaaatttc acagttaaga 420
 tgttcttaaa ttgatgtctc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta 480
 tcagagctgt taggaaa 497

<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

<400> 80
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 tctaaatgtc trwaaawatt tatttgcac taaattttct atcggctctc ctagtgaatt 120
 tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat 180
 aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa 240
 ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga 300
 aggatacatc tgtgtgaagg ctggctgaaa ccccaactat ggctacacaa gctttgacac 360
 ctttagctgg gctttcctgt ctctatttctg actcatgact caagactact gggaaaatct 420
 ttaccagttg gtaagggtcca aatgagcatg cataacattt atttttatag acatgtatga 480
 aatgaaaagc ataggctgag t 501

<210> 81

<211> 432
<212> DNA
<213> Homo sapiens

<400> 81
agctaattag tctactgact atctaactgt ggtaatcaga tattttatttg gggacattat 60
actaaaatac tgatggaatt atccccatt tcccctagac attacgtgct gctgggaaaa 120
catacatgat attttttgtc ctggtcattt tcttgggctc atttttatttg gtgaatttga 180
tcctggctgt ggtggccatg gcctatgagg ggcagaatca ggccaccttg gaagaagcag 240
aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag 300
ctcaggctact gagtataaaa mgcaaagatt tatcattatt attmttagtt tctaagtaga 360
aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt 420
gtcattagac ac 432

<210> 82
<211> 489
<212> DNA
<213> Homo sapiens

<400> 82
tgcaaactgt tttcaaagct ctgtgttcta aatagtcgct ggctttgttt tatgacaggc 60
agttgcggca gcatcagctg cttcaagaga tttcagtga ataggtgggt taggagagct 120
gttggaaggt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa 180
ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga 240
cagctttccc aaatccgaat ctgaagacag cgtcaaaaaga agcagcttcc ttttctccat 300
ggatggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc 360
tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt 420
ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag 480
ttgtttaaa 489

<210> 83
<211> 653
<212> DNA
<213> Homo sapiens

<400> 83
gtgaagacta aatgaagtgg ttgtatactt agtaaatgac aaatcagtat tgtagtcag 60
aaaaacactc tttgtactta aatttgcttt aataaaaata tcaaaatata tgtgtcctct 120
ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc 180
tttaatatata atatttatta aataattgag ttcttcccct acccccatcc cattcctttc 240
ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg 300
caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa 360
tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact 420
gtttgtgccg cacagacatg gagagcgacg caacagtaac gttagtcagg ccagtatgtc 480
atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca 540
atggtgtggg ttccttggtg ggtggacctt cagctctaac gtcacctact gggcaacttc 600
cccagagggtg ataatatagtg acctagctgc tactgacatt attcaccaat ttg 653

<210> 84
<211> 566
<212> DNA
<213> Homo sapiens

<220>

<221> modified_base
<222> (477)
<223> N = A, C, G, or T

<400> 84
gaattctctt aaaggtacta cctgtgatac tttttttaaa aaaaaactgt ttataactta 60
gcaataattc aatattttat tcttgaaatt cttacctgga aaattgcatg tagcatgatt 120
tgcaaaagaaa tgctatgtgg tgttgattta cttattggga agagtgggtt gagccatcag 180
tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt 240
accagatttc aatggagatg ctggaggatt cctctggaag gcaaagagcc gtgagcatag 300
ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
tgattatgtg ctttgatgaac tattccttct tttcatagaa ttactgaagt ctgttaccga 420
gatcgaacta tatatttagac ctaagaatgt gatatatggt gtacattatc acattgntta 480
caaaactaat attggcctta ttctttttga cttgggtcct taccttactt gcagagtgat 540
atttcaacac ttgatattat atcaat 566

<210> 85
<211> 748
<212> DNA
<213> Homo sapiens

<400> 85
tagtcatttt aaaagcaaaa tattaaattc aaagtgccta ttttctgtat tcaaaagaga 60
aaaaagtcga tctatatgac attttaatta acattttctg aaaatattta atgggattgt 120
cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttggt 180
aaataatgta aaatctacta gcaataataa ctcatttttg ttgttattta ctactcttcc 240
ttgttattgt cctccagaa cttgaagaat ctagacagaa atgtccgcca tgctggtata 300
gatttgccaa tgtgttcttg atctgggact gctgtgatgc atgggttaaaa gtaaaacatc 360
ttgtgaattt aattgttatg gatccatttg ttgatcttgc catcactatt tgcattgtct 420
taaataccct ctttatggcc atggagcact accccatgac tgagcaattc agtagtgtgt 480
tgactgtagg aaacctggta agtacatttg aagtttactt atttactttg gtagatgtgg 540
gagagataga ccaaagggaa agatgtattt gtgctgtggt gaacccaaaa attatattct 600
ctttcctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
gtcttaccag ttgtaaacgt ctcaaaat 748

<210> 86
<211> 664
<212> DNA
<213> Homo sapiens

<400> 86
ctaagacttg aattgatttg tcactattct ctcactttta attttagata tttttattcc 60
tgtctaattg tcttctttat aaattcgtgt agcatcagt ttttcagtgc tcttgatagt 120
agtgtgatc tctaattttt taggtcttta ctgggatttt tacagcagaa atgggttctca 180
agatcattgc catggatcct tattactatt tccaagaagg ctggaatatt tttgatggaa 240
ttattgtcag cctcagttta atggagcttg gtctgtcaaa tgtggaggga ttgtctgtac 300
tgcgatcatt cagactggta tctattttata tatatccctg tcgctcattg gcacaacatt 360
tattttgaaa ttgaatcaat gtatattttat ataattatta atttttaattt taaattttaca 420
tcaatatgtg acatttctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacatttagaa 540
aacctacaag tacttttcta aactgtgttt taagtattatg aagctttttt ggccttacag 600
tctgtaaaga tacgcaaata aaaattttaga cccagtttaa ttttagcttt ttattaaccc 660
tact 664

<210> 87
<211> 750
<212> DNA
<213> Homo sapiens

<400> 87
tattttttatt tttgcactta aatgatatta tgaccagatt tacaattcta atattgttaa 60
cactattttt tctggatttg aaattgaatc agttcagtat attttgagtt tttacatcta 120
ccacgtgtgg ttctatgata ccacatacta ataaaataat gtctaaaatt atattatgat 180
tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
tggcccacac taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 300
ctcaccttgg tgttggccat catcgtcttc atttttgctg tggtcggcat gcagctcttt 360
ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacgggtg 420
cacatgaacg acttcttcca ctcttcctg attgtgttcc gcgtgctgtg tggagagtgg 480
atagagacca tgtgggactg tatggaggtc gctggccaaa ccatgtgcct tattgttttc 540
atgttgggtca tggtcatttg aaaccttggt gtatgtatgt agtacaaatg ctcataaatt 600
agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctgggtt 660
atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttattt 720
aacttctcct gggctctggt ttcccatatt 750

<210> 88
<211> 768
<212> DNA
<213> Homo sapiens

<400> 88
ccttagagca ggatattagg tcctttaaaag agtgtgtgac ttagacatgg catctgaaat 60
atagtaagca ttcaataaac atttgttgaa ataatttttag caaagatcta tgagttccct 120
ttttaggctg ttattttaa gcatatttca atattaarat aggcattttt ctttttttct 180
tttaggttct gaacctcttt ctggccttat tgttgagttc atttagctca gacaaccttg 240
ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaa 300
aggggaattga ttatgtgaaa aataagatgc gggagtgttt ccaaaaagcc ttttttagaa 360
agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata 420
ctggaattga aataagcaaa gagcttaatt atcttagaga tgggaatgga accaccagt 480
gtgtaggtac tgggaagcagt gttgaaaaat acgtaatcga tgaaaatgat tatatgtcat 540
tcataaacia cccagcctc accgtcacag tgccaattgc tgttgagagag tctgactttg 600
aaaacttaaa tactgaagag ttcagcagtg agtcagaact agaagaaagc aaggaggtaa 660
ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttattttac 720
tattttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt 768

<210> 89
<211> 471
<212> DNA
<213> Homo sapiens

<400> 89
taattattag tacataatga tcagtaatgc taatagagtt aaatgctatc actacatttt 60
ttttcacaca atgacacagt atttcccagt tagttaaata aaagggggaa aatcacatct 120
ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag 180
ttgatgttgt tctaccccga gaagggtgaac aagctgaaac tgaaccgaa gaagacctta 240
aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc 300
cttgttcttt acgggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt 360
gtgggtggctt atgcctgtaa ccccaaaatt ttgggagggt acggtaggag gattgcttga 420
ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c 471

<210> 90
<211> 623
<212> DNA
<213> Homo sapiens

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<400> 90
gaattctaag tagctggctg agtatataag tctgagaata attcattata caggagggat 60
gctgacgata actaggaaat gaaggagatg gttaccctat gaaatgatta cctggaagtg 120
gagtggggaa ggggcaagaa agtttatttt ttctatttta agattaaaat atatttttta 180
attaactata ttttattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca 240
gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag 300
cacaactggg ttgagacttt cattgtgttc atgatccttc tcagtagtgg tgcattggta 360
agtgaatgc atattggcaa gaatcagatt ctggtgaaat agtttattct ccaaaattac 420
cagatgcaaa cactgagctt cagaatcaaa agaaaaaggca tatctgtgtc ttgcagagct 480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag 540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca 600
tttcagagaa cattctgtaa cca 623
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<210> 91
<211> 520
<212> DNA
<213> Homo sapiens

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<400> 91
ctagttagtc tttagatttg tctcatgttc aatgtttatg taaaatatca ataatacaaa 60
ttattctttt gtactcacta ttatactaag caattttttc aaatatttag aagaagcaag 120
ccattttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac 180
agcgaaagac tatcaaaacc atgctagaat atgctgacaa agtctttacc tatataattca 240
ttctggaaat gcttctcaaa tgggttgctt atggatttca aacatatttc actaatgcct 300
ggtgctggct agatttcttg atcgttgatg taagtatttt aagtgatttt tataaaattg 360
tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata 420
atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc 480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg 520
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<210> 92
<211> 595
<212> DNA
<213> Homo sapiens

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<400> 92
ctaactaata atttaagcac acatccatga aggatctggc attgaactca atcctgaatt 60
atcagtggta tatgcacaag ttgaaaaggg gtccatggta taaaatatct aactggagat 120
attgacacgt gttgataaat atgggcaagt attctggttt cattgggtta aaaaaagcaa 180
tagtatgaga tgagactggc aatataagat gaccccaacta tgtggaagat gaaagttgcc 240
aagggtatgc caaattagta tttagtctgc attaaataga taccacaccc tataccttca 300
gtcaacagtt tatttcttgg tgaactaatt aatttttttt tcctttttgta ggtttctttg 360
gttagcctgg tagccaatgc tcttggtac tcagaactcg gtgccatcaa atcattacgg 420
acattaagag cttaagacc tctaagagcc ttatcccggg ttgaaggcat gagggtaaga 480
agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa 540
aagggtgccca tactcttctg atattttatt caatagaaat tacagaatta gaagc 595
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<210> 93

<211> 787
<212> DNA
<213> Homo sapiens

<400> 93
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ttttccttca aatatgtgct agaaaaatta gaagaaacaa cttgtccacc tagattttta 180
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aacgggtaac atgtttgaca ttagtgatgt taacaatttg agtgactgtc aggcctcttg 480
caagcaagct cgggtgaaaa acgtgaaagt aaactttgat aatgttggcg ctggctatct 540
tgactgctt caagtggtaa gtggctactg tacgagtttt gaaaaagttt tcaagatgtt 600
tcaaggaaga ttatttccct gatgttcttc gtttgaatga ctaacatttg acagcatgaa 660
aaaaagttaa tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca 720
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tatttct 787

<210> 94
<211> 438
<212> DNA
<213> Homo sapiens

<400> 94
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ctcttgatat gaaatttcac aatattgtac aaaaagttat ttgttataat actgtcagat 120
tttcatctgg ttaaattgtca ttgttaggtg aaatttttat gaacaattca aatatatgtt 180
atttacaggc cacattttaa ggctggatgg atattatgta tgcagctgtt gattcacgag 240
atgtaagtat cactcaaata ttatttatag gttctagatt tcttatgggtg aatattgggtg 300
gtaattttaa cactgataca tccaaaattc tatattagaa catttaatat tgcataataa 360
aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata 420
ttagctaat atgaaacg 438

<210> 95
<211> 637
<212> DNA
<213> Homo sapiens

<400> 95
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<210> 96

<211> 637
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<213> Homo sapiens

<400> 96
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ggaaagacaa atatTTTTTg tgaaagtact attggaacac agaattgtaa ccagttttat 240
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caatgcaatg aagaaaactg gatccaagaa acctcagaaa cccatacctc gcccagcagt 360
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catatTTTgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa 540
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aatacttcca aagcaagggt cactttcctg ctaccaa 637

<210> 97
<211> 759
<212> DNA
<213> Homo sapiens

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cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag 180
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<210> 98
<211> 3975
<212> DNA
<213> Homo sapiens

<400> 98
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<210> 99
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 99
tgtgttctgc cccagtgaga ct

22

<210> 100
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 100
cttcctgctc tgcccaaact gaat

24

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 101
ggc gatgtaa tgtaaggtgc tgtc

24

<210> 102
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 102
gtgccttcag ttgcaattgt tcag

24

<210> 103
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 103
 ttaggaattt catatgcaga ataa 24

<210> 104
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 104
 tgggccattt ttcgtcgtc 19

<210> 105
 <211> 25
 <212> DNA
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<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 105
 gaaagacgca ttgcagaaga aaagg 25

<210> 106
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 106
 ctattggcat gtgttggtgc taca 24

<210> 107
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 107

gtgctggttt ctcatTTaac ttTac

25

<210> 108

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 108

ttcccaactt aatttgatat ttagc

25

<210> 109

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 109

gcagtttggg cttttcaatg ttag

24

<210> 110

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 110

gacacagttt caraatcccr aatg

24

<210> 111

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 111

ttagggctac gtttcatttg tatg

24

<210> 112

<211> 24

<212> DNA
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<220>
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oligonucleotide

<400> 112
agcactgatg gaaaaccaaa ctat

24

<210> 113
<211> 24
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oligonucleotide

<400> 113
agcccatgca gtaatataaa tcct

24

<210> 114
<211> 24
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<213> Artificial Sequence

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oligonucleotide

<400> 114
tccaggctga taagctatgt ctaa

24

<210> 115
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<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 115
ctgtggcctg cctgagcgta tt

22

<210> 116
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

oligonucleotide

<400> 116 24
ccaattctac tttttaagga aatg

<210> 117
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<212> DNA
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oligonucleotide

<400> 117 19
aaatacttgt gcctttgaa

<210> 118
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<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 118 23
gtacatacaa tatacacaga tgc

<210> 119
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<220>
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oligonucleotide

<400> 119 23
aggcagcaga acgacttgta ata

<210> 120
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 120 24
atccgggtttt aatttcataa ctca

<210> 121
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 121
gttgagcacc cttagtgaat aata

24

<210> 122
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 122
tcacacgctc tagactactt ctct

24

<210> 123
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oligonucleotide

<400> 123
tgcaaatact tcagcccttt caaa

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<210> 124
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oligonucleotide

<400> 124
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22

<210> 125
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<212> DNA
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<400> 125

gcagcaggca ggctctca

18

<210> 126

<211> 24

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<400> 126

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24

<210> 127

<211> 24

<212> DNA

<213> Artificial Sequence

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oligonucleotide

<400> 127

ataatcttgc aaaatgaaat caca

24

<210> 128

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oligonucleotide

<400> 128

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19

<210> 129

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<400> 129
gataacgaga gccgtagaga ttcc

24

<210> 130
<211> 20
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oligonucleotide

<400> 130
agccagccat gcctgaacta

20

<210> 131
<211> 23
<212> DNA
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oligonucleotide

<400> 131
tgtttgcttg tcatattgct caa

23

<210> 132
<211> 22
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tgcactattc ccaactcaca aa

22

<210> 133
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oligonucleotide

<400> 133
aagggtgtct ctgtaacaaa aatg

24

<210> 134

<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 134
gtgatggcca ggtcaacaaa

20

<210> 135
<211> 24
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 135
ctgggactgt tctccatatt gggt

24

<210> 136
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oligonucleotide

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18

<210> 137
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<400> 137
cattgtggga aaatagcata agc

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oligonucleotide

<400> 138
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23

<210> 139
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oligonucleotide

<400> 139
taatgctttt agaatacata caaa

24

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oligonucleotide

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<210> 141
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oligonucleotide

<400> 141
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oligonucleotide

<400> 142
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22

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oligonucleotide

<400> 143
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<210> 144
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oligonucleotide

<400> 144
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<400> 204
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24

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23

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22

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22

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18

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<210> 230
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24

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oligonucleotide

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24

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24

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oligonucleotide

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24

<210> 254
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oligonucleotide

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22

<210> 255
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oligonucleotide

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22

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23

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oligonucleotide

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oligonucleotide

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23

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aggatataat ttttggttca aca 23

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<210> 373
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oligonucleotide

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24

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oligonucleotide

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21

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oligonucleotide

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19

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22

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<210> 382

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15